

Date: Wednesday, 12/11/2008 1:31:09 PM  
 User: Julie Dawson

## Process Sheet:

<b>Customer</b> :	CU-DAR001 Dart Helicopters Services	<b>Drawing Name</b> :	407 FWD X-TUBE
<b>Job Number</b> :	43340	<b>Part Number</b> :	D407667105
<b>Estimate Number</b> :	12348	<b>Drawing Number</b> :	D407-667-145 REV B <i>DSI 9415 Rev A</i>
<b>P.O. Number</b> :		<b>Project Number</b> :	N/A
<b>This Issue</b> :	12/11/2008	<b>Drawing Revision</b> :	B
<b>Prsht Rev.</b> :	NC	<b>Material</b> :	
<b>First Issue</b> :	//	<b>Due Date</b> :	02/12/2008
<b>Previous Run</b> :	41406	<b>Qty:</b>	1 <b>Um:</b> Each
<b>Written By</b> :			
<b>Checked &amp; Approved By</b> :	<i>JLD 08.11.12</i>		
<b>Comment</b> :	Est Rev:F 05.09.01 Add holes for compatibility with Bell Skidtubes KJ/JLM Est Rev:G 08-05-16 chg QC6 to QC15 DD verified by:EC Est Rev:H 08-06-03 update as per DSI9415 (ECN1198) DD verified by:ec Est Rev:I 08-07-14 add (scribe inside of tube) seq.6 DD verified by:EC Est Rev:J 08-07-28 update as per (par 08-013) DD verified by:EC		

## Additional Product

Job Number:



<b>Seq. #:</b>	<b>Machine Or Operation:</b>	<b>Description :</b>
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1.0	DC	DOCUMENT CONTROL
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*for JLD 08.12.03*

**Comment:** DOCUMENT CONTROL

Photocopy bluefile and create labels as per PPP D407-667-105 CHG003

*508/12/03*

2.0	PACKAGING 1	PACKAGING RESOURCE #1
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**Comment:** PACKAGING RESOURCE #1

3.0	D407667105TRN	Crosstube Turning Detail
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**Comment:** Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

CROSSTUBE TURNING DETAIL

batch *B-41652*

*DMB*

*08-11-13*

4.0	BENDING	BENDING MACHINE SKIDTUBES
-----	---------	---------------------------

**Comment:** BENDING MACHINE

Bend tube as per Dwg D407-667-145 using CNC bender program 407-fw and Folio FT016

*JLD 08-11-13*

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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## Process Sheet

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Drawing Name: 407 FWD X-TUBE

Job Number: 43340

Part Number: D407667105

Job Number:



Seq. #:

Machine Or Operation:

Description:

5.0

QC15

DIMENSIONAL CHECK OF X-TUBES



Comment: DIMENSIONAL CHECK OF X-TUBES

08-11-13 (1)

6.0

CROSSTUBES

CROSSTUBES RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1- scribe batch # inside of cuff

2-Drill pilot holes in tube using drill Jig DT8541 & DT8542 as per Dwg D407-667-145. Drill all (3) top holes.

3-Drill and Ream all holes in tube to finish size using drill Jig DT8541 & DT8542 as per Dwg D407-667-145  
Check dimensions between holes on all four sides.

4-Flip tube and switch drilling Jigs from right to left, left to right. Locate Jigs off existing holes using "T" pins.

5-Drill pilot holes using drill Jig DT8541 & DT8542 as per Dwg 407-667-145. Drill only the top (2) holes.

6-Drill & ream the top (2) holes to finish size using drill Jig DT8541 & DT8542 as per Dwg D407-667-145

7-Drill Fwd rivet holes using drill Jig DT8787FWD as per Dwg D206-667-145. Note: Fwd side has 3x top holes.

8-Drill Aft rivet holes using drill Jig DT8787AFT as per Dwg D407-667-145.

9-C/sink holes as per Dwg D407-667-145. Allow rivet to sit below surface to compensate for paint.

10 -Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D407-667-145

7.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

8.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

9.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Drawing Name: 407 FWD X-TUBE

Job Number: 43340

Part Number: D407667105

Job Number:



Seq. #: Machine Or Operation: Description :

10.0 OUTSIDE SERV.11

OUTSIDE SERVICE -CROSSTUBES



PD: 7627



Comment: Sub-Contracting OUTSIDE SERVICE -CROSSTUBES

11.0 PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Inspect for transit damage

Ensure copy of NDT results attached to work order.

12.0 QC6

DIMENSIONAL CHECK



Comment: Inspect for damage & ensure results are as per Dwg D206-667-145

13.0 SPRAY PAINTING

SPRAY PAINTING



Comment: SPRAY PAINTING

1-Prime inside and outside crosstube as per QSI 005 4.2

2-Paint outside crosstube with White Imron as per QSI 005 4.2

14.0 QC14

INSPECT SPRAY PAINT



Comment: Inspect Spray Paint

Wrap in plastic bag to protect from scratches

15.0 D3595075395

RUBBER CUSHION .75" x 3.95



Comment: Qty.: 4.0000 Each(s)/Unit Total: 4.0000 Each(s)

RUBBER CUSHION .75" x 3.95

batch: 42998

16.0 D2873043

Nut Plate Assembly



Comment: Qty.: 2.0000 Each(s)/Unit Total: 2.0000 Each(s)

Pick:

Qty Part number Description Batch

2 D2873-043 Nut Plate 41988

RT 08-11-19

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

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Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 407 FWD X-TUBE

Job Number: 43340

Part Number: D407667105

Job Number:



Seq. #:	Machine Or Operation:	Description :
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17.0	D2873045	Nut Plate Assembly
------	----------	--------------------



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Pick:

Qty	Part number	Description	Batch
2	D2873-045	Nut Plate	41987

RT 08-11-19

18.0	D28911	2.25 Support
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Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Pick:

Qty	Part number	Description	Batch
2	D2891-1	Support	37655X1 38122X1

ml 08 12 01

19.0	MS20601AD4W10	RIVET
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Comment: Qty.: 14.0000 Each(s)/Unit Total : 14.0000 Each(s)

Pick:

Qty	Part number	Description	Batch
14	MS20601AD4W10	Rivet	108076

RT 08-11-19

20.0	MS2192020	Clamp (per MIL-DTL-8783C)
------	-----------	---------------------------



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Pick:

Qty	Part number	Description	Batch
4	MS21920-20	Clamp	107501

ml 08 12 01

21.0	CROSSTUBES	CROSSTUBES RESOURCE 1
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Comment: LANDING GEAR RESOURCE 1

magna bond B# 1089166 exp: 10:2009 time: 9:20am

1-Install abrasion strips as per QSI-035 using DT8579. .Note: (2) top holes should be facing up.

2-Install supports and clamps as per Dwg D407-667-145. Torque clamps to 80-100 in lb

3-Install nut plates as per Dwg D407-667-145. Touch-up rivet heads with Imron paint. RT 08-11-19

ml 08 12 01 ①  
ml 08 12 02 ①

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Drawing Name: 407 FWD X-TUBE

Job Number: 43340

Part Number: D407667105

Job Number:



Seq. #: Machine Or Operation: Description :

22.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

5 08/12/02 (X)

23.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1  
Pick Packing Kit

24.0

AN532A

Bolt



Comment: Qty.: 4.0000 Each(s)/Unit Total: 4.0000 Each(s)  
Bolt  
Batch: M109282

SP

25.0

MS21042L5

Nut



Comment: Qty.: 4.0000 Each(s)/Unit Total: 4.0000 Each(s)  
Nut  
Batch: M109297

SP

26.0

AN510A

Bolt



Comment: Qty.: 10.0000 Each(s)/Unit Total: 10.0000 Each(s)  
Batch: M109282

SP

27.0

AN530A

BOLT



Comment: Qty.: 4.0000 Each(s)/Unit Total: 4.0000 Each(s)  
Pick:Packing Kit  
Qty Part number Description Batch  
4 AN5-30A Bolt M105144

SP

28.0

AN960JD516

Washer



Comment: Qty.: 18.0000 Each(s)/Unit Total: 18.0000 Each(s)  
Pick:Packing Kit  
Qty Part number Description Batch  
18 AN960JD516 Washer M109282

(X)

SP

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Drawing Name: 407 FWD X-TUBE

Job Number: 43340

Part Number: D407667105

Job Number:



Seq. #:

Machine Or Operation:

Description :

29.0

QC4

INSPECT 100% KITS FOR COMPLETENESS



Comment: INSPECT 100% KITS FOR COMPLETENESS

*S 08/12/03 (X)*

30.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D407-667-105

Location: \_\_\_\_\_

PPP Rev: \_\_\_\_\_

*Rev C*

*Label checked.*

*SP 08/12/03 (X)*

31.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

*08/12/04*

Job Completion



*mk 08-12 03*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

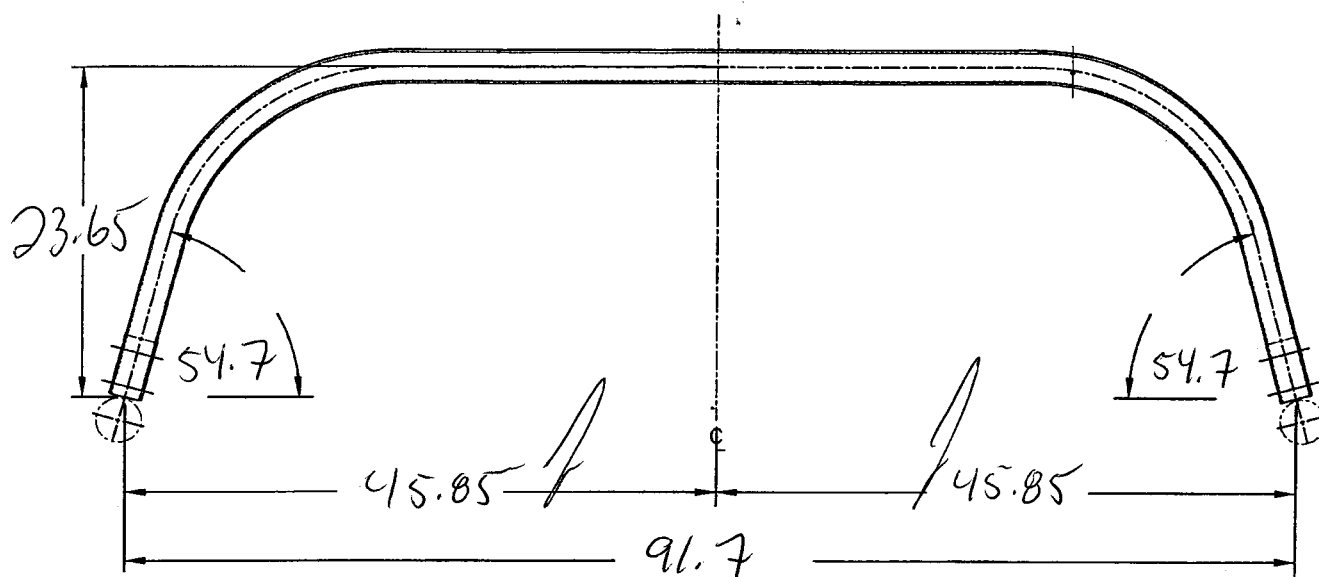
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

<b>DART AEROSPACE LTD</b>	<b>Work Order:</b> 43340
<b>Description:</b> Crosstube High Fwd (407)	<b>Part Number:</b> D407-667-105
<b>Inspection Dwg:</b> D407-667-145 <b>Rev:</b> B	<b>Page 1 of 1</b>

Required Dimension	Min	Max
Height	23.48	23.60
1/2 Span	45.88	46.0
Angle	54	56
Total Span	91.76	92.0



Comments

QC15 Inspection	Done
Date	08/11/13

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	[Signature]

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

**DART**

DESIGN PH	DRAWN BY PH	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
CHECKED <del>PH</del> DS	APPROVED <del>PH</del> DS	DRAWING NO. D407-667-145	REV. B SHEET 1 OF 3
DATE 05.07.26		TITLE CROSSTUBE ASS'Y (407 HIGH FWD) NTS	
A	02.05.08	NEW ISSUE	
B	05.07.26	ADD HOLES AND NUT PLATES FOR COMPATABILITY WITH BHT/AA SKIDTUBES	

RELEASED  
05.07.26**UNDER REVIEW**

06-08-10

re-draw detail

OK GP 08.11.13

Qty	Part Number	Description
X	D407-667-145	CROSSTUBE ASSEMBLY (407 HIGH FWD)
1	D6010-115	CROSSTUBE
<del>2</del>	<del>D2856-400-694</del>	<del>ABRASION STRIP</del>
2	D2873-043	NUT PLATE
2	D2873-045	NUT PLATE
2	D2891-1	SUPPORT
14	MS20601AD4W10	RIVET (OR NAS9302B-4-10)
4	MS21920-20	CLAMP
4	D3555-075-355	RUBBER CUSHION

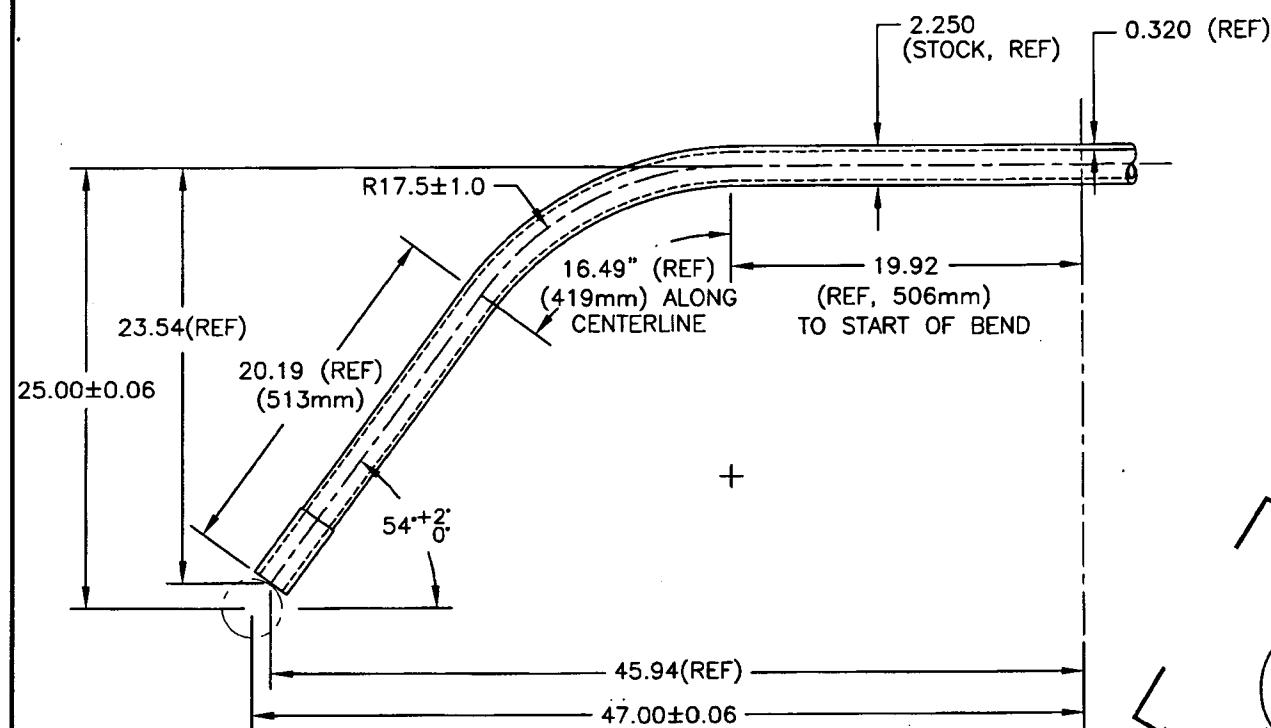
**GENERAL NOTES:**

- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 2) MATERIAL: MANUFACTURED FROM D6010-115  
FINISHED LENGTH = 113.20±0.020
- 3) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2  
PAINT OUTSIDE PER DART QSI 005 4.2
- 4) PART IS SYMMETRIC ABOUT CENTERLINE.
- 5) RUN-OFF PART. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
- 6) BEND PROGRESSIVELY WITH A MINIMUM OF 6 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 7) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 8) SCRIBE DART PART NUMBER AND BATCH NUMBER IN THIS AREA WITH VIBRATING STYLUS.
- 9) INSTALL ~~D2856-400-694~~ ABRASION STRIP WITH A 0.13 (REF) GAP ON BOTTOM SIDE OF CROSSTUBE, CENTERED OPPOSITE D2891-1 SUPPORT, PER QSI 035.
- 10) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 11) SEAL EDGES OF SUPPORTS AND ABRASION STRIP USING SIKAFLEX-241/291 SEALANT (OPTIONAL).
- 12) TORQUE CLAMPS 80 TO 100 IN-LB.

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WITHOUT NOTICE  
WORK ORDER  
NO. 43340

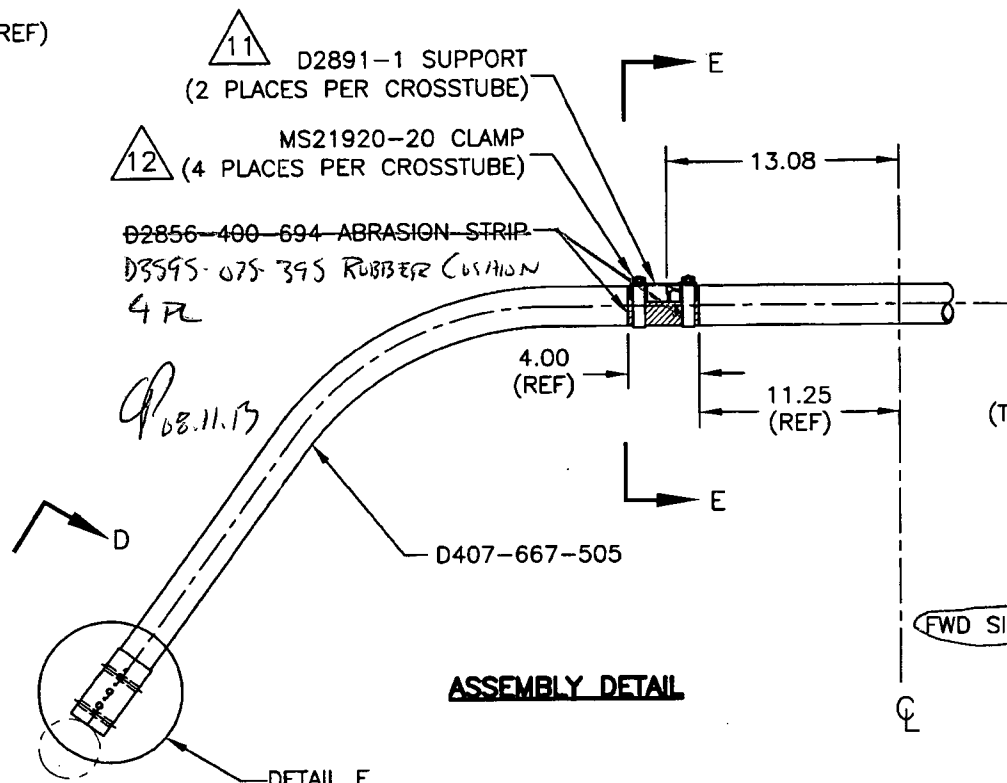
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**BENDING DETAIL**

6



**ASSEMBLY DETAIL**

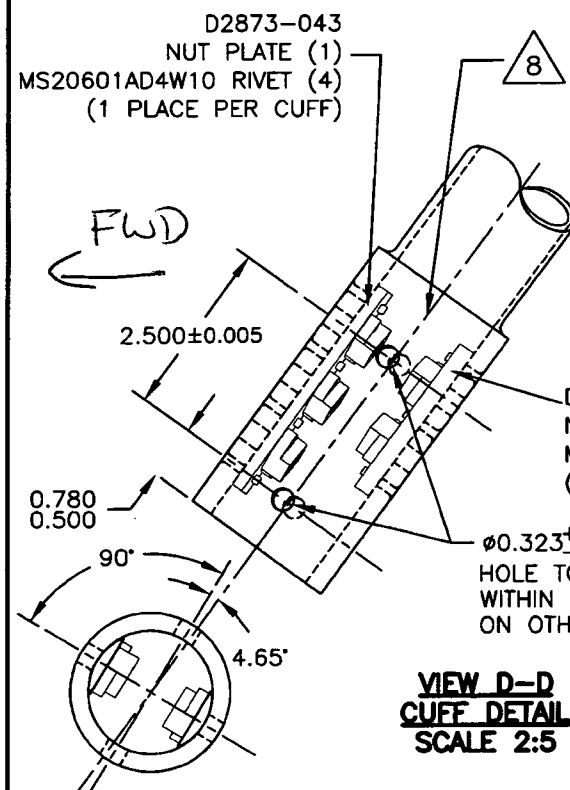
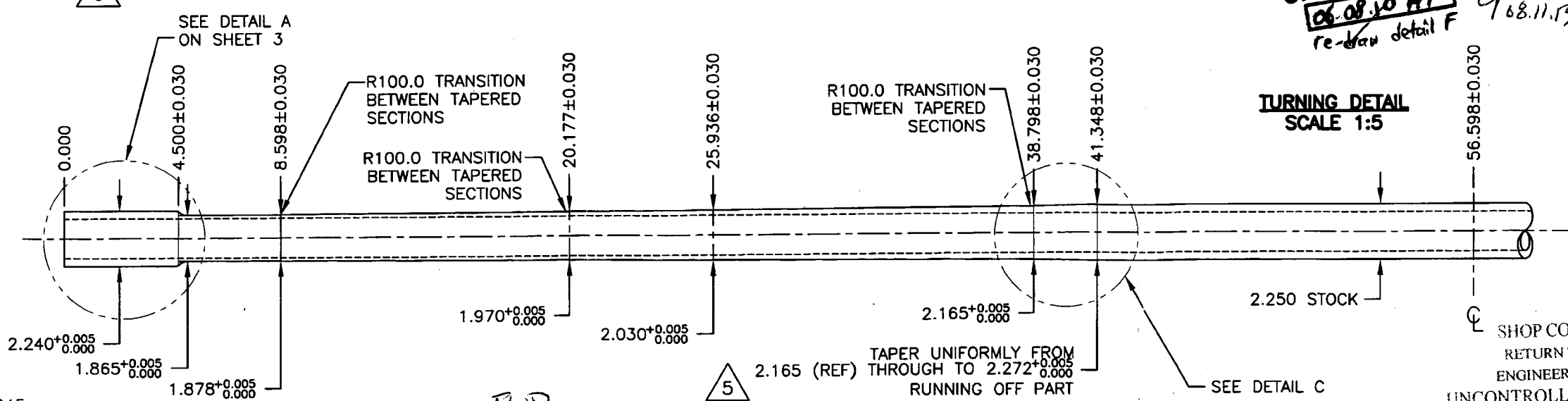
B  $\varnothing 0.323^{+0.005}_{-0.000}$   
(TYP 5 PLACES PER CUFF)  
HOLE TO BE ALIGNED WITHIN  $\pm 0.001$   
OF HLE ON OTHER SIDE OF CUFF

PILOT  $\varnothing 0.128$   
C'SINK  $\varnothing 0.225 \times 100'$   
(TYP 7 PLACES PER CUFF)

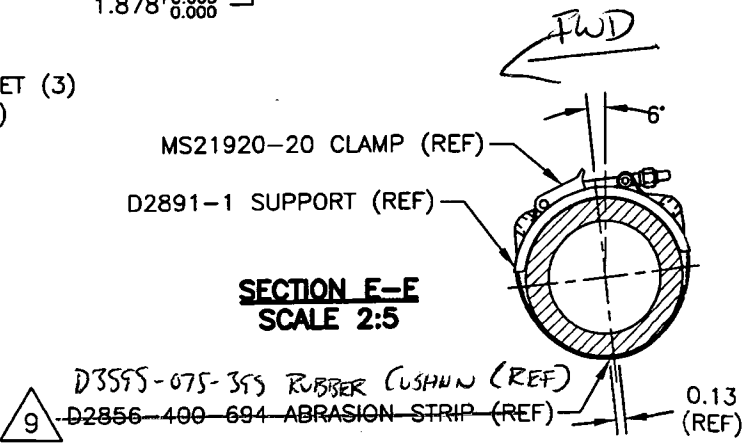
FWD SIDE ONLY  
IE. ON OPPOSITE  
SIDE ONLY  
**DETAIL E**  
SCALE 2:5

**UNDER REVIEW**  
06-08-10  
re-draw detail F

**TURNING DETAIL**  
SCALE 1:5



**VIEW D-D**  
**CUFF DETAIL**  
SCALE 2:5



**SECTION E-E**  
SCALE 2:5

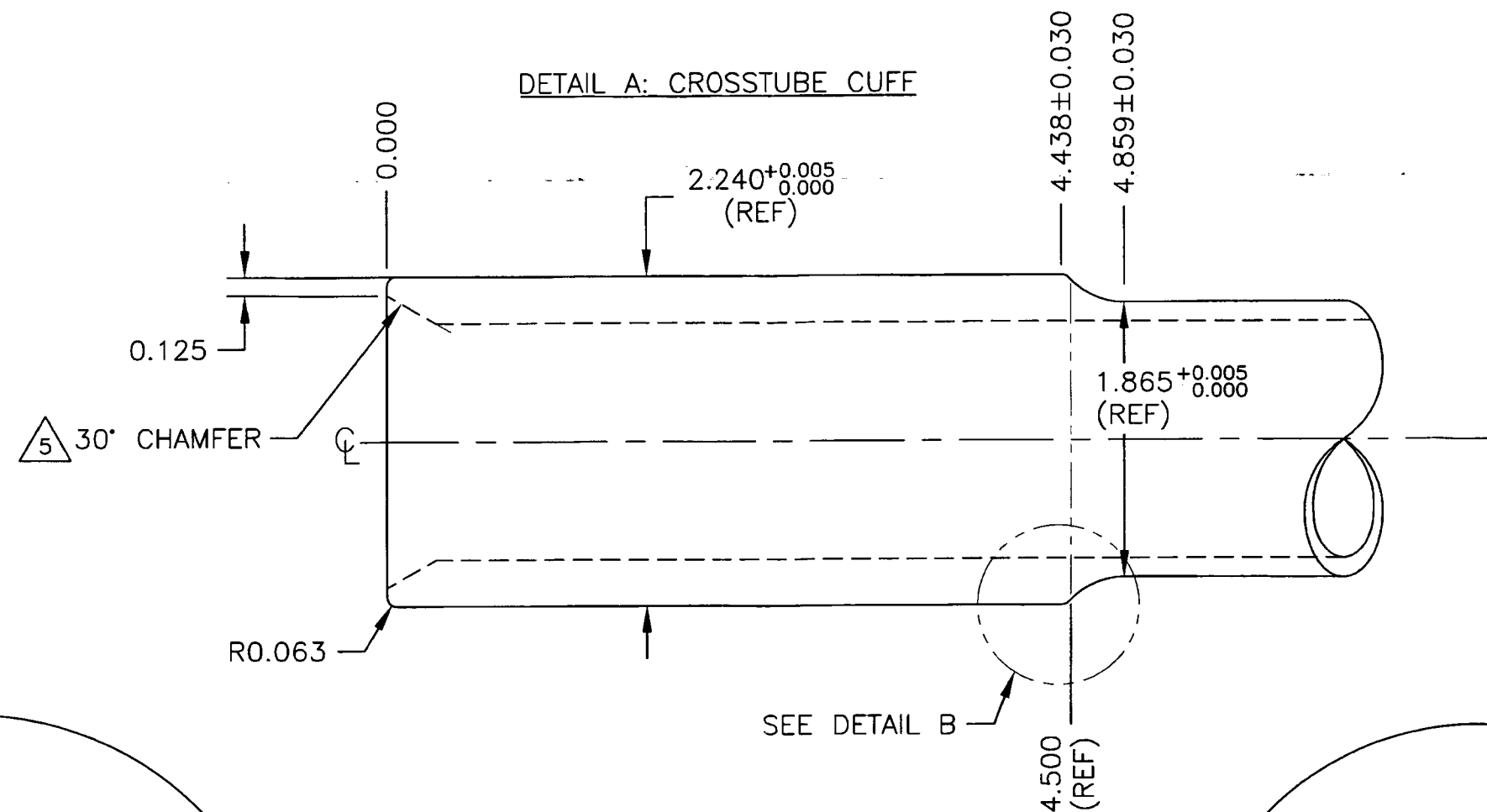
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05-07-26

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		DATE	05.07.26			D407-667-145	SHEET 2 OF 3
						TITLE	SCALE
						CROSSTUBE ASS'Y (407 HIGH FWD)	1:10

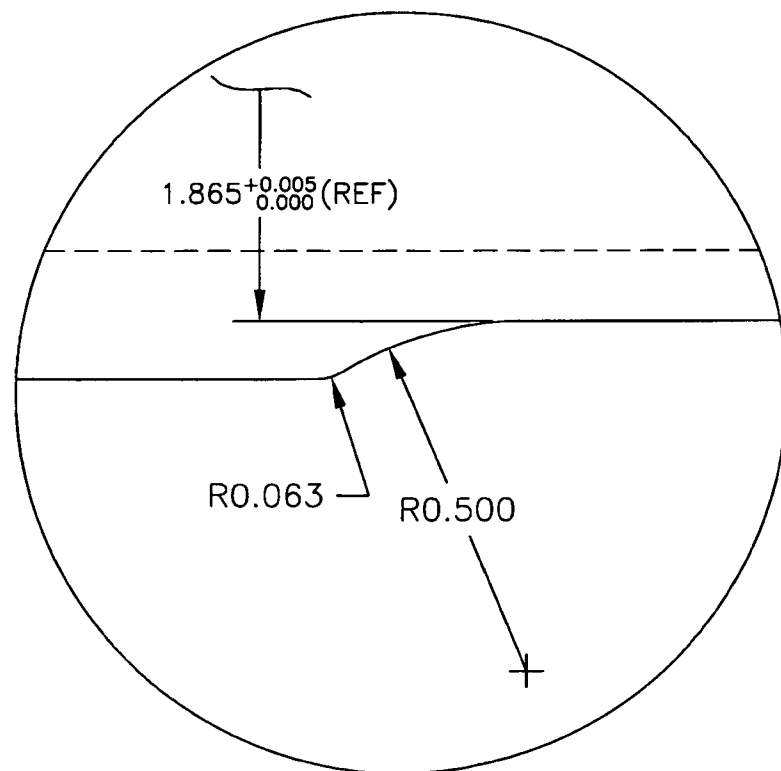






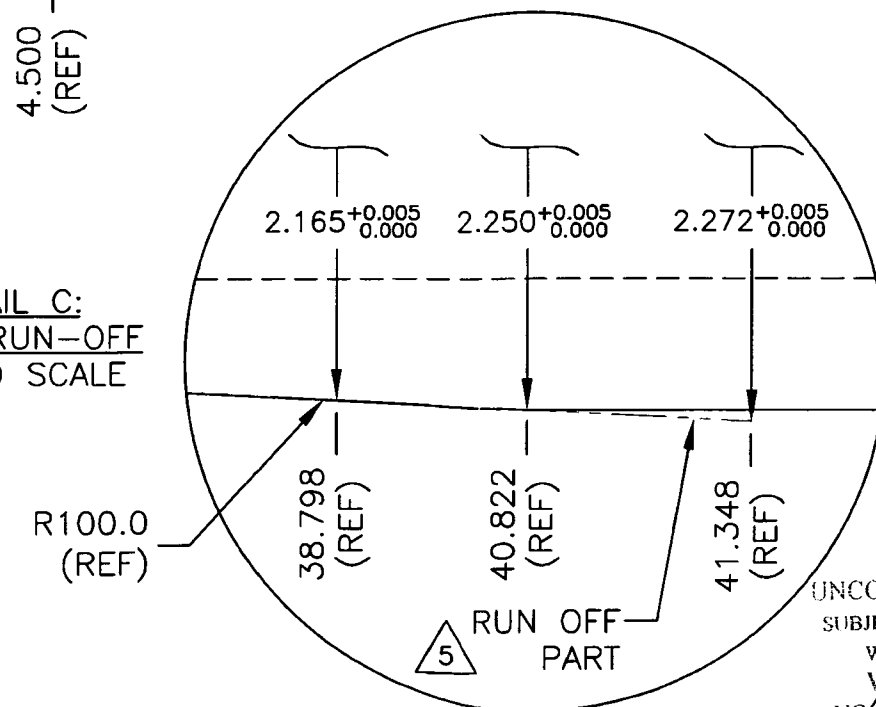
08.11.13  
**UNDER REVIEW**  
 06.08.10 PH  
 re-draw detail F

**RELEASED**  
 05.07.26



DETAIL B: CUFF  
 TRANSITION  
 SCALE 4:1

DETAIL C:  
 TAPER RUN-OFF  
 NOT TO SCALE



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 WITHOUT NOTICE  
 WORK ORDER  
 NO. 43240

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DESIGN	PH	DRAWN BY	PH	<b>DART</b>	DART AEROSPACE LTD. HAWKESBURY, ONTARIO, CANADA
CHECKED	DS	APPROVED	DS	DRAWING NO.	REV. 8
DATE	05.07.26	TITLE	CROSSTUBE ASS'Y (407 HIGH FWD)	SHEET 3 OF 3	SCALE



# DART SERVICE INSTRUCTION

TO AMEND INSTALLATION INSTRUCTIONS IIN-D206-667 REV. C AND  
INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA-D206-667 REV. 2  
REF: CANADIAN STC: SH01-5  
REF: FAA STC: SR01304NY

For D206-667-101/-201/-103/-203 or D407-667-105 cross tubes at CHG 003 or later, the D2856-400-694/-773 abrasion strip has been removed, the center D2891-1 or D2892-1 support has been bonded onto the crosstube using Magnabond 6398 and D3595-075-395/-450 Rubber Cushions have been installed underneath the MS21920-20/-22 Clamps. Amend parts list of the IIN-D206-667 section 5 and ICA-D206-667 Section 32.8 as follows:

**REMOVE:**

ITEM	QTY -101	QTY -201	QTY -103	QTY -203	QTY -105	PART NUMBER	DESCRIPTION
13	2	2	2		2	D2856-400-694	ABRASION STRIP
14				2		D2856-400-773	ABRASION STRIP

**ADD:**

ITEM	QTY -101	QTY -201	QTY -103	QTY -203	QTY -105	PART NUMBER	DESCRIPTION
24	4	4	4		4	D3595-075-395	RUBBER CUSHION
25				4		D3595-075-450	RUBBER CUSHION

To prevent the supports from shifting on the D206-667-101/-201/-103/-203 or D407-667-105 crosstubes at CHG 002 or earlier, the D2891-1/D2892-1 supports should be removed and re-installed as follows:

- Follow section 32.1 of ICA-D206-667 for the removal of the crosstubes from the helicopter.
- Remove the qty (2) MS21920-20/-22 clamps from the crosstube that fasten the D2891-1/D2892-1 supports to the crosstube.
- Remove the D2856-400-694/-773 abrasion strip from the crosstube per section 32.5 of ICA-D206-667.
- Inspect the crosstube surface underneath the support for corrosion and mechanical damage per items 5.3.1 and 5.3.2 of the 300 hour inspection of ICA-D206-667. Repair damage within acceptable limits per item 5.3.3 of the 300 hour inspection in ICA-D206-667. Touch up finish per item 5.3.9 of the 300 hour inspection.
- Abrade area to which support will be applied with 400 grit sandpaper. Saturate a clean cloth with MEK or 4105S Wash'n'Wipe Degreaser or equivalent and wipe area until there is no residue.
- Apply a 0.03" to 0.06" thick layer of Magnabond 6398 underneath the D2891-1/D2892-1 support and re-install the support on the crosstube as shown in Figure 1. Position and secure the D2891-1/D2892-1 support on the crosstube using MS21920-20/-22 Clamps. Install a D3595-075-395/-450 Rubber cushion underneath each MS21920-20/-22 Clamp. Torque clamps 80-100 in-lb. Let the D206-667-101/-201/-103/-203 or D412-667-105 crosstube assembly cure as per the Magnabond 6398 instructions before re-installing the crosstube on the aircraft.

CANADA  
DEPARTMENT OF TRANSPORT  
AIRCRAFT CERTIFICATION  
BRANCH  
DAO # 01-O-01

**APPROVED**

BY: D. Shepherd  
D. SHEPHERD (DE # 02)

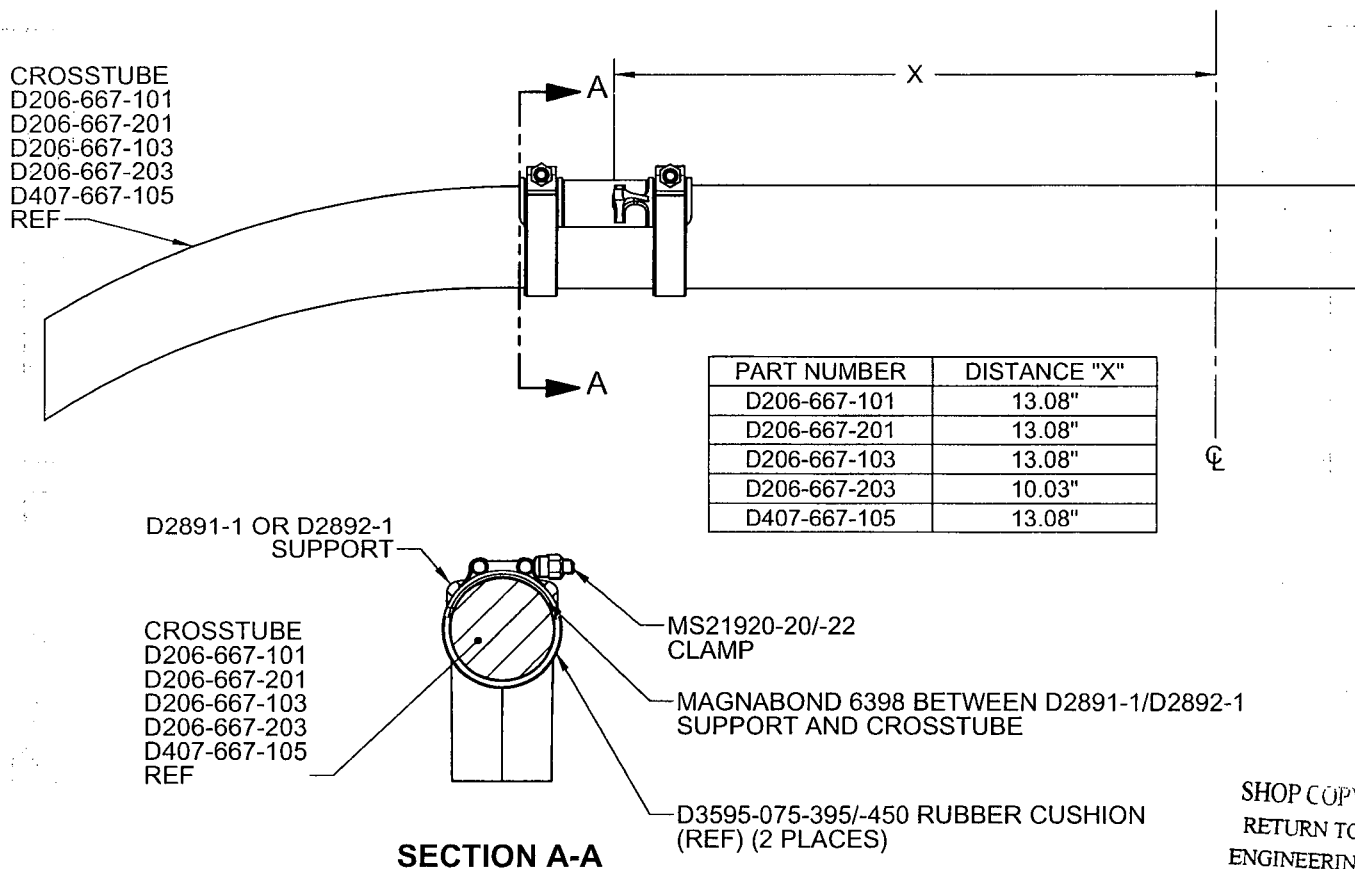
DATE: 08.05.26  
CERT. NO.: SH01-5  
ISSUE NO.: 3

A	NEW ISSUE	HS	08.05.26
REV.	DESCRIPTION	BY	DATE
DESIGN	HS	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	HS		
CHECKED	PH	DRAWING NO.	REV. A
MFG. APPR.	E	DSI 9415	SHEET 1 OF 2
APPROVED	W	TITLE	SCALE
DE APPR.	HA	<b>CROSSTUBE SUPPORT CHANGE</b> NTS	
DATE	08.05.26	COPYRIGHT © 2008 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

7) Re-install the D206-667-101/-201/-103/-203 or D412-667-105 crosstube per section 32.2 of ICA-D206-667.

For customers who would like to upgrade their D206-667-101/-201/-103/-203 or D412-667-105 crosstubes from CHG 002 or earlier to CHG 003, the following kit can be obtained from Dart:

QTY -011	QTY -013	PART NUMBER	DESCRIPTION
X		DSI 9415-011	CROSSTUBE SUPPORT CHANGE (USABLE ON D206-667-101/-201/-103 OR D407-667-105)
	X	DSI 9415-013	CROSSTUBE SUPPORT CHANGE (USABLE ON D206-667-203)
4		D3595-075-395	RUBBER CUSHION
	4	D3595-075-450	RUBBER CUSHION



### SECTION A-A

**FIGURE 1 - CROSSTUBE SUPPORT**

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 43340

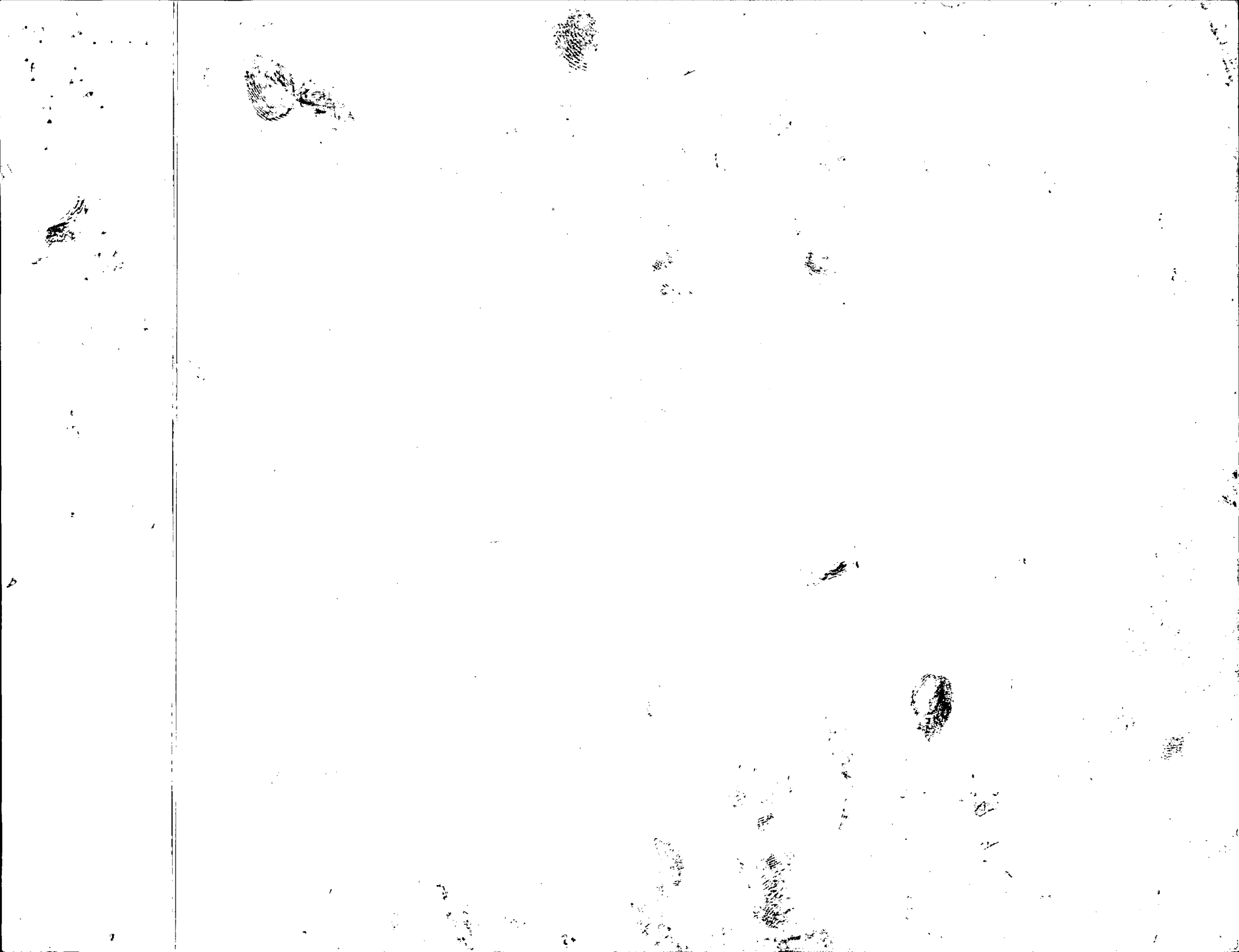
CANADA  
DEPARTMENT OF TRANSPORT  
AIRCRAFT CERTIFICATION  
BRANCH  
DAO # 01-O-01

**APPROVED**

BY: D. Shepherd  
D. SHEPHERD (DE # 02)

DATE: 08.05.26  
CERT. NO.: SH01-5  
ISSUE NO.: 3

DESIGN	HS	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA
DRAWN	HS	
CHECKED	PH	DRAWING NO. <b>DSI 9415</b>
MFG. APPR.	<u>[Signature]</u>	REV. A SHEET 2 OF 2
APPROVED	<u>[Signature]</u>	TITLE <b>CROSSTUBE SUPPORT CHANGE</b>
DE APPR.	<u>[Signature]</u>	SCALE <b>NTS</b>
DATE	<b>08.05.26</b>	COPYRIGHT © 2008 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.





## LIQUID PENETRANT TEST REPORT

P- 08827

CLIENT DAOT Aerospace DATE Nov. 19-2008 PAGE 1 OF 1  
 ATTENTION LINDA LACELLE ACUREN JOB NO. 188-08-1121 TIME AM ☒ PM ☐  
 ADDRESS 1270 ABERDEEN FOWO NO.         
KAWKES Bldg, ONT. WORK LOCATION SAME ADDRESS, SHOP.  
 ACCEPTANCE STD. QST-038 REV/DATE 2005  
 PROJECT N/A  
 ITEM(S) EXAMINED 407 HIGH AFT X-TUBE ASSEMBLY, 1407 FWD X TUBE  
812 X-TUBE, LOW STANDARD AFT.

JOB DESCRIPTION        PROCEDURE NO. LT-001 REV/DATE 12 NOV. 07 TECHNIQUE NO. LT-002 REV/DATE NOV. 07 08  
 PART NO. D212-664-247/D407667205/D407667105 MATERIAL ALUMINUM THICKNESS         
 SCOPE 100% EXTERNAL WET FLOUORESCENT INSPECTION  
ON UNITS

## TEST DETAILS

METHOD ☒ FLUORESCENT ☐ VISIBLE ☐ WATER WASH ☐ SOLVENT REMOVABLE ☐ POST EMULSIFIED  
 FAMILY BRAND        BLACK LIGHT S/N 8171 ☒ OUTPUT > 1000  $\mu$ W/cm<sup>2</sup> ☐ AMBIENT < 2 fc  
 PENETRANT 2LG7 MINIMUM DWELL TIME 10 MIN. LIGHTING EQUIP. ☐ FLASHLIGHT ☐ TROUBLELIGHT ☐ OUTPUT > 100 fc @ SURFACE  
 PENETRANT REMOVER H2O MINIMUM DRY TIME > 10 MIN. OTHER CAL FEB 12-08  
 DEVELOPER SK052 MINIMUM DWELL TIME 10 MIN. LIGHT METER S/N        CAL DUE DATE         
 DEVELOPER TYPE ☐ NON-AQUEOUS ☐ AQUEOUS ☐ DRY

## TEST SURFACE

SURFACE CONDITION ☐ AS GROUND ☐ AS WELDED ☐ MACHINED ☐ SHOT BLASTED ☐ CLEAN BARE METAL  
 SURFACE TEMPERATURE ☐ < -4°C/20°F ☐ -4°C/20°F TO 10°C/50°F ☐ 10°C/50°F TO 52°C/125°F ☐ > 52°C/125°F

RESULTS- ( ☐ METRIC ☐ IMPERIAL )

ITEM	COMMENTS	ACCEPT	REJECT
JB	units		
41042		/	
42878		/	
43340		/	
41043		/	
NO INDICATIONS			
WERE FOUND ON THESE			
PARTS THAT WERE			
EXAMINED			

## Scope of Services

The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner/operator and are not intended nor can they be construed as representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a result of the data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

In performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

## SIGNATURES

CLIENT REPRESENTATIVE Jason Muelach DTR # E-20057  
 TECHNICIAN (SIGNATURE): [Signature] SIGNATURE  
 NAME (PRINT): Mike Johnston REPORT REVIEWED BY:         
 1<sup>st</sup> TECHNICIAN NAME INITIALS  
 CGSB LEVEL II SNT LEVEL        CGSB LEVEL        SNT LEVEL         
 CGSB REG. NO. 0666 CGSB REG. NO.